

From: Kevin Lewis
To: Marsh, William
CC: Schneider, Marchant
Date: 7/31/2008 1:49 PM
Subject: MS 5 at Lenah LEED score card
Attachments: MS 5 Score Card 7 31 08 KL.pdf

William,

I have attached the LEED score card for the MS 5 project. As we discussed, the final engineering documents required for the overall assessment and baseline documentation is not yet complete. However we do not anticipate changes in the score card at this time. If anything arises from the final report, I will notify you. thanks for your patience in waiting for our team to get the information as accurate as possible.

Kevin Lewis, PE
Director of Construction Services
Loudoun County Public Schools
21000 Education Ct.
Ashburn, VA 20148
kevin.lewis@loudoun.k12.va.us
571-252-1161
571-252-1296 (Fax)



LEED for Schools 2007 Registered Project Checklist

Project Name: MS 5 Loudoun County Public Schools (July 31, 2008 KL)

Project Address: Lenah

Yes	?	No		
31			Project Totals (Pre-Certification Estimates)	
CERTIFIED			79 Points	
			Certified: 29-36 points	Silver: 37-43 points
			Gold: 44-57 points	Platinum: 58-79 points

Yes	?	No		
8			Sustainable Sites	
			16 Points	

Yes			Prereq 1	Construction Activity Pollution Prevention	Required
Yes			Prereq 2	Environmental Site Assessment	Required
			Credit 1	Site Selection	1
			Credit 2	Development Density & Community Connectivity	1
			Credit 3	Brownfield Redevelopment	1
1			Credit 4.1	Alternative Transportation, Public Transportation	1
			Credit 4.2	Alternative Transportation, Bicycle Use	1
			Credit 4.3	Alternative Transportation, Low-Emitting & Fuel Efficient Vehicles	1
			Credit 4.4	Alternative Transportation, Parking Capacity	1
			Credit 5.1	Site Development, Protect or Restore Habitat	1
1			Credit 5.2	Site Development, Maximize Open Space	1
1			Credit 6.1	Stormwater Design, Quantity Control	1
1			Credit 6.2	Stormwater Design, Quality Control	1
			Credit 7.1	Heat Island Effect, Non-Roof	1
1			Credit 7.2	Heat Island Effect, Roof	1
1			Credit 8	Light Pollution Reduction	1
1			Credit 9	Site Master Plan	1
1			Credit 10	Joint Use of Facilities	1



LEED for Schools 2007 Registered Project Checklist

Yes	?	No			
5			Water Efficiency		7 Points
1			Credit 1.1	Water Efficient Landscaping , Reduce by 50%	1
1			Credit 1.2	Water Efficient Landscaping , No Potable Use or No Irrigation	1
			Credit 2	Innovative Wastewater Technologies	1
3			Credit 3	Water Use Reduction	1 to 3
			Credit 3.1	20% Reduction	1
			Credit 3.2	30% Reduction	2
			--> Credit 3.3	40% Reduction	3
			Credit 4	Process Water Use Reduction , 20% Reduction	1

Yes	?	No			
4			Energy & Atmosphere		17 Points
Yes			Prereq 1	Fundamental Commissioning of the Building Energy Systems	Required
Yes			Prereq 2	Minimum Energy Performance	Required
Yes			Prereq 3	Fundamental Refrigerant Management	Required

***Note for EAc1:** All LEED for Schools projects registered after June 26, 2007 are required to achieve at least two (2) points.

2			Credit 1	Optimize Energy Performance	2 to 10
			--> Credit 1.2	14% New Buildings / 7% Existing Building Renovations	2
			Credit 1.3	17.5% New Buildings / 10.5% Existing Building Renovations	3
			Credit 1.4	21% New Buildings / 14% Existing Building Renovations	4
			Credit 1.5	24.5% New Buildings / 17.5% Existing Building Renovations	5
			Credit 1.6	28% New Buildings / 21% Existing Building Renovations	6
			Credit 1.7	31.5% New Buildings / 24.5% Existing Building Renovations	7
			Credit 1.8	35% New Buildings / 28% Existing Building Renovations	8
			Credit 1.9	38.5% New Buildings / 31.5% Existing Building Renovations	9
			Credit 1.10	42% New Buildings / 35% Existing Building Renovations	10
			Credit 2	On-Site Renewable Energy	1 to 3
			Credit 2.1	2.5% Renewable Energy	1
			Credit 2.2	7.5% Renewable Energy	2
			Credit 2.3	12.5% Renewable Energy	3
1			Credit 3	Enhanced Commissioning	1
1			Credit 4	Enhanced Refrigerant Management	1
			Credit 5	Measurement & Verification	1
			Credit 6	Green Power	1

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LEED for Schools 2007 Registered Project Checklist

Yes	?	No			
2			Materials & Resources		13 Points
Yes			Prereq 1	Storage & Collection of Recyclables	Required
			Credit 1.1	Building Reuse , Maintain 75% of Existing Walls, Floors & Roof	1
			Credit 1.2	Building Reuse , Maintain 95% of Existing Walls, Floors & Roof	1
			Credit 1.3	Building Reuse , Maintain 50% of Interior Non-Structural Elements	1
1			Credit 2.1	Construction Waste Management , Divert 50% from Disposal	1
			Credit 2.2	Construction Waste Management , Divert 75% from Disposal	1
			Credit 3.1	Materials Reuse , 5%	1
			Credit 3.2	Materials Reuse , 10%	1
1			Credit 4.1	Recycled Content , 10% (post-consumer + 1/2 pre-consumer)	1
			Credit 4.2	Recycled Content , 20% (post-consumer + 1/2 pre-consumer)	1
			Credit 5.1	Regional Materials , 10% Extracted, Processed & Manufactured	1
			Credit 5.2	Regional Materials , 20% Extracted, Processed & Manufactured	1
			Credit 6	Rapidly Renewable Materials	1
			Credit 7	Certified Wood	1



LEED for Schools 2007 Registered Project Checklist

Yes	?	No		
9			Indoor Environmental Quality	
			20 Points	
Yes			Prereq 1	Minimum IAQ Performance
Yes			Prereq 2	Environmental Tobacco Smoke (ETS) Control
Yes			Prereq 3	Minimum Acoustical Performance
			Credit 1	Outdoor Air Delivery Monitoring
			Credit 2	Increased Ventilation
1			Credit 3.1	Construction IAQ Management Plan, During Construction
1			Credit 3.2	Construction IAQ Management Plan, Before Occupancy
2			Credit 4	Low-Emitting Materials
			Credit 5	Indoor Chemical & Pollutant Source Control
1			Credit 6.1	Controllability of Systems, Lighting
1			Credit 6.2	Controllability of Systems, Thermal Comfort
1			Credit 7.1	Thermal Comfort, Design
1			Credit 7.2	Thermal Comfort, Verification
			Credit 8.1	Daylight & Views, Daylight 75% of Spaces
				75% of classrooms (Required for either points below)
				90% of classrooms
				75% of other spaces
			Credit 8.2	Daylight & Views, Views for 90% of Spaces
			Credit 9	Enhanced Acoustical Performance, 40 dBA / RC level of 32
				Enhanced Acoustical Performance, 35 dBA / RC level of 27
1			Credit 10	Mold Prevention

Yes	?	No		
3			Innovation & Design Process	
			6 Points	
1			Credit 1.1	Innovation in Design: Integrated Pest Management Plan
			Credit 1.2	Innovation in Design: Provide Specific Title
			Credit 1.3	Innovation in Design: Provide Specific Title
			Credit 1.4	Innovation in Design: Provide Specific Title
1			Credit 2	LEED® Accredited Professional
1			Credit 3	School as a Teaching Tool



LOUDOUN COUNTY PUBLIC SCHOOLS
PLANNING AND LEGISLATIVE SERVICES

21000 Education Court
Ashburn, Virginia 20148
Telephone: 571-252-1050
Facsimile: 571-252-1101

August 1, 2008

Mr. Marchant Schneider
Loudoun County Planning Department
1 Harrison Street, S.E.
3rd Floor
Leesburg, VA 20177

Re: SPEX 2008-0017, CMPT 2008-0007, LCSB Lenah Property, Archaeological Study

Dear Marchant:

As a part of the referral comments provided by the Environmental Review Team (ERT), additional archaeological analysis was recommended for the school property. On June 10, 2008, LCPS staff and consultants with Wetlands Studies and Solutions, Inc. met with Michael Clem, ERT, to determine the scope of the work for the property investigation. This additional field investigation has been completed and is enclosed. Please find seven (7) copies of the Phase I Archeological Investigation of the Lenah School Property dated July 2008 for your review. I ask that you forward copies to the appropriate referral agencies and let me know if any additional information is needed.

Thank you for your attention to this matter.

Sincerely,

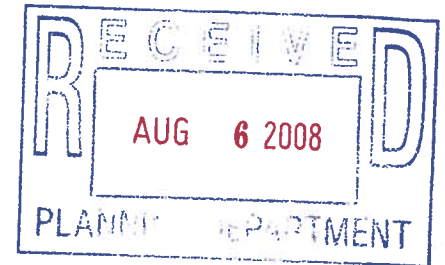
Sara Howard-O'Brien, AICP
Land Management Supervisor





LOUDOUN COUNTY PUBLIC SCHOOLS
PLANNING AND LEGISLATIVE SERVICES

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August 6, 2008

Mr. Marchant Schneider
Loudoun County Planning Department
1 Harrison Street, S.E.
3rd Floor
Leesburg, VA 20177

**Re: SPEX 2008-0017, CMPT 2008-0007, LCSB Lenah Property, Resubmission for
Planning Commission Public Hearing**

Dear Marchant:

In accord with our discussions, I am submitting a revised Special Exception/Commission Permit Plat (revised August 6, 2008) to address second round referral comments, meetings with referral agencies, landscaping enhancements, and other additions as outlined herein. Five copies are provided for your review and use. More specifically, the plat has been revised to incorporate the following:

Zoning Referral Comments dated 6/19/08: The Boundary Line Adjustment Application Number has been added to Note 2 on Sheet 1. The car parking spaces at the Bus Parking Area have been maintained but labeled for use by the bus drivers in accord with discussions with Zoning Staff.

Loudoun Water Referral Comments dated June 11, 2008: The construction plan and profile (CPAP), site plan and Loudoun Water plans have been referenced under Note 10. The comments from Loudoun Water will be appropriately addressed as a part of the site plan and CPAP review.

Community Planning Referral Comments dated June 20, 2008: Note 14 has been expanded to recognize the lighting system and standards for site lighting.

ERT Referral Comments dated April 29, 2008: Note 19 has been revised to reference the additional archaeological investigation dated July 2008.

Landscaping: LCPS has been working with the owners of property located at the southwest corner of the school site to determine the most effective buffer. We had previously included an enhanced Type II buffer along the full length of our western property boundary which provided supplemental plantings of 2 canopy and 7 evergreen

trees per 100 feet to the Type II side buffer (two canopy, four understory, ten shrubs and two evergreen trees per 100 liner feet). The owner of MCPI 287-46-9040 indicated a preference that the existing vegetation be maintained to the extent possible. We conducted a survey along the western property boundary and met with the owners in the field. Based on our ongoing discussions, LCPS has offered to maintain existing trees (10 inches in diameter or less) within the 25 foot landscape buffer, and to supplement this buffer to the extent necessary to provide a Type II buffer. Subject to property owner permission, we will plant a row of Leyland Cypress just to the west of the existing tree line (on MCPI 287-46-9040). LCPS has also agreed to extend the fence from the competition fields past the practice fields and then eastward to create a physical separation between the properties.

School Program Additions: Because it is unknown whether gas will be available at the site, small propane tanks have been added at the schools (a 100 gallon tank at the MS and at the HS) for science classes (Reference Note 16) and press boxes have been added at the ball fields.

Middle School Student Drop-Off/Pick-Up: There is a planned student drop-off/pick-up area located on the east side of the middle school. The facilities to the south of the middle school (basketball courts, playing field) have been shifted to provide an additional access driveway to permit traffic coming from Braddock Road via the Lenah Connector to access from the internal drive without having to go out on existing Lenah Road. This drive will also continue to serve as the emergency access drive around the middle school.

Also included is the updated Statement of Justification along with a highlighted copy to show the changes from our July 24, 2008 submission. Thank you for your time and attention.

Sincerely,



Sara Howard-O'Brien, AICP
Land Management Supervisor

From: Kevin Lewis
To: Marsh, William
CC: Howard-O'Brien, Sara; Schneider, Marchant; Theurich, Kenneth
Date: 8/13/2008 10:37 AM
Subject: Lenah SPEX LCPS Turf Management system
Attachments: Integrated Turf Management Program 07-03-07.doc

William,

As requested I have attached a copy of the integrated turf management program. I believe I have provided all of the requested data so if I have missed anything please give me a call and we'll get whatever you need. thanks

Kevin Lewis, PE
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LOUDOUN COUNTY PUBLIC SCHOOLS INTEGRATED TURF MANAGEMENT PROGRAM

BACKGROUND

In 2000, to control the application of herbicides and fertilizer applied to Loudoun County Public Schools athletic competition fields, physical education fields and school common areas, the turf management program for the entire school division was assumed by the Facilities Services Department. The goal of the Integrated Turf Management Program is to maximize the use of physical practices and minimize the amount of chemicals necessary to achieve turf that provides the maximum amount of safety for our students and provides school appearance expected of our parents, neighbors and administrators. When chemicals are used, they will be the most environmentally friendly and of the lowest application rate necessary to achieve control of the weeds or turf pests.

RESPONSIBILITIES

Director of Facilities Services - Program Manager for the Integrated Turf Management Program. Responsible for establishing procedures, working with the turf management contractors to develop the integrated turf management program, training staff in the proper mowing practices necessary to maintain vigorous turf. Responsible for budgeting for annual Integrated Turf Management contract costs.

INTEGRATED TURF MANAGEMENT VOCABULARY

Integrated Turf Management Contractor – The contractors that are responsible for performing routine monitoring of turf areas in Loudoun County Public Schools and recommending and implementing methods for maintaining safe turf for the safety of athletic and physical education activities. These practices will include both chemical and physical practices to manage the turf areas of Loudoun County Public Schools

Physical Practices – Physical practices include, but are not limited to, watering, mowing, aerating, de-thatching, seeding and top dressing.

Chemicals – Turf management chemicals include fertilizers, herbicides and pesticides applied to turf.

INTEGRATED TURF MANAGEMENT PROCEDURES

Integrated Turf Management is achieved through managed use of contractor and in-house staff to achieve the turf management goals of safety for students and community users and maintaining the appearance of our schools in their communities. Integrated Turf Management is a year round program. During the winter months the contractors and the Director of Facilities Services will assess the effects of the turf management during the previous growing season. The appearance and vigor of the turf will be assessed and any changes necessary to the program for the upcoming growing season will be determined. The goal being to minimize the quantity of chemicals to be applied during the upcoming growing season.

Loudoun County Public Schools staff will be responsible for providing all mowing services for athletic competition fields, physical education fields, and common areas of school campuses. Loudoun County Public Schools staff shall also be responsible for aerating, seeding and top dressing physical education fields. The turf management contractors shall be responsible for physical practices on the athletic competition fields and physical education fields as determined by the turf management plan and available funding.

Loudoun County Public Schools staff shall be responsible for fertilizing physical education fields. The turf management contractor shall be responsible for fertilization, application of herbicides and pesticides on athletic competition and common areas of school campuses.

During the growing season the competition turf management contractors will make monthly visits to the competition fields and quarterly visits to common areas of school campuses. At scheduled points through the growing season they will perform physical practices to stimulate growth of the turf. In the Spring, Fall and Winter season they will apply chemicals to stimulate growth of the turf and inhibit growth of weeds. Fertilizer will be applied at a rate not to exceed 1 pound of nitrogen per 1000 square feet. Soil tests will be made to determine the amount of potassium and phosphorous necessary for the turf. These tests will determine the fertilizer composition that is used for each application. Pre-emergent and post-emergent herbicides will be used in the Spring and Fall to control areas of weeds in competition fields and common turf areas. No herbicides will be used on physical education fields.

During the monthly visits, if the turf management contractor identifies the presence of turf pests, pesticides will be applied, in the minimum concentration possible to rid the turf of the pest.

All individuals who apply herbicides and pesticides shall be properly registered and certified by the Commonwealth of Virginia for the chemical that they are applying. Records of all, herbicide, and pesticide applications will be maintained by the contractor in accordance with the Commonwealth of Virginia pesticide application regulations

Fertilizer is necessary to provide vigorous turf that can sustain high school athletic competition, daily use by school physical education classes and youth sports leagues and to encourage growth of turf on common areas of the school campus. Chemical controls will be used only as necessary to prevent noxious weeds from encroaching on the athletic competition fields and the common areas of the school campus

IMPORTANT TELEPHONE NUMBERS

Facilities Services Department

703-771-6462

A-240

July 3, 2007



LOUDOUN COUNTY PUBLIC SCHOOLS
PLANNING AND LEGISLATIVE SERVICES

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Ashburn, Virginia 20148
Telephone: 571-252-1050
Facsimile: 571-252-1101

August 21, 2008

Marchant Schneider
Department of Planning
County of Loudoun County
1 Harrison Street, S. E., 3rd Floor
Leesburg, VA 20177-7000



RE: SPEX 2008-0017 & CMPT 2008-0007
Loudoun County School Board – Lenah Property
Transportation 2nd Referral Responses

Dear Marchant:

On August 5, 2008, we met with County Transportation and VDOT staff to review the Lenah Property transportation referrals. Thank you for coordinating the meeting. As a result of both the 2nd referral and the meeting, additional information was requested for the application review. Please find enclosed detailed responses to the transportation second referral comments. Also attached are cost estimates for:

1. Westbound left turn lane and traffic signal at the intersection of Route 50 and Lenah Road
2. Single-Lane Roundabout at Route 50 and Lenah Road
3. Two-Lane Roundabout at Route 50 and Lenah Road

We are providing ten copies for your use and distribution.

Copies of the 2nd referral responses will be posted on the LCPS web site for easy access by the public. If you have any questions or need additional information, please let me know. Thank you for your assistance in this matter.

Sincerely,

Sara Howard-O'Brien, AICP
Land Management Supervisor



MEMORANDUM

TO: Marchant Schneider
Art Smith
George Phillips
Loudoun County
Loudoun County
Loudoun County

CC: Sara Howard-O'Brien
Sam Adamo
Loudoun County Public Schools
Loudoun County Public Schools

FROM: Christopher Tacinelli, P.E.
Tushar Awar, P.E.
Cody Francis, P.E.
Bowman Consulting Group

DATE: August 21, 2008

SUBJECT: Response to Comments for Traffic Impact Study - Loudoun County Public Schools
Lenah Property MS-5 and HS-7; SPEX 2008-0017 and CMPT 2008-0007 – 2nd Referral

This document addresses the comments from **Loudoun County OTS** for the traffic impact study prepared for Loudoun County Public Schools, Lenah Property MS-5 and HS-7; SPEX 2008-0017 and CMPT 2008-0007, Loudoun County, Virginia. Each comment is presented in *italics* with the response in **bold** immediately following.

COMMENTS:

- 1) While a roundabout was considered by VDOT at the Route 50/Lenah Road intersection, funding has not been approved. Therefore, in order to facilitate safe travel on Route 50 and accommodate the anticipated site traffic turning onto Lenah Road from Route 50, intersection improvements are necessary. These could take the form of the roundabout or new left and right turn lanes. A traffic signal is shown to be needed. Currently, no funds are available for the design and installation of this signal. The applicant notes that they want to review the Route 50/Lenah Road intersection improvements and funding with OTS. OTS agrees that more discussion is needed. A final decision will be made upon further consideration of the available traffic data and VDOT's recommendations.*

In a detailed work session (August 5, 2008) with VDOT and Loudoun County staff it was determined that cost, responsibility, operation and timeline would be the most effective measures for evaluating the implementation of either a roundabout or a signalized intersection. It continues to be our opinion that the signal and

westbound left turn lane are the most appropriate solution since they enhance student safety, cost less than a roundabout, require no offsite right of way (which is difficult to secure and costly in that it may possibly result in damage to the residual property resulting in a complete take), provides an immediate improvement that meets County and VDOT operational requirements and can be constructed in advance of the 2010 school openings. Further, the signal and turn lane improvements do not preclude a future roundabout at this location. A roundabout on the other hand is more expensive; it requires multiple landowners to agree to ROW purchase and/or necessitates condemnation. A roundabout will take longer to construct as a consequence of land acquisition requirements and maintenance of traffic during the construction phase. Last, a roundabout has been shown to break down and provide less than desirable operational levels with the forecasted traffic. The single lane roundabout would only provide acceptable level of service with only the middle school traffic. The single lane roundabout fails with the addition of 2010 background traffic projections. Likewise, it fails with the addition of the high school traffic. A two-lane roundabout is needed to serve both the middle school and the high school and a two-lane roundabout would also require the four laneing of Route 50. By comparison the signalized intersection with a westbound left turn lane continues to achieve acceptable levels of service with the construction of both the middle school and high school, plus background traffic projections through 2011. Traffic projections for 2020 find that the two-lane roundabout fails and would necessitate a three-lane roundabout and the widening of Route 50 to six lanes. By comparison, the signalized Route 50 intersection requires an expansion to 4 lanes under the 2020 traffic projection scenario.

The following table provides a summary of these major considerations as it related to both the signal and turn lane improvements and the roundabout:

Route 50 and Lenah Road	Traffic Signal and Additional WB Left Turn	1 Lane Roundabout	2 Lane Roundabout
Cost			
- Construction	\$800,000	\$1,100,000	\$4,100,000
- Land Acquisition	\$0	\$120,000	\$710,000

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Route 50 and Lenah Road	Traffic Signal and Additional WB Left Turn	1 Lane Roundabout	2 Lane Roundabout
<u>Operational Analysis</u>	LOS (AM/PM)	LOS (AM/PM)	LOS (AM/PM)
- Existing Conditions with MS Traffic	B/A	B/B	N/A
- Existing Conditions with MS and HS Traffic	C/A	LOS Fails	A/A
- Future Conditions with MS Traffic (2010)	D/D	LOS Fails	A/A
- Future Conditions with MS and HS Traffic (2011)	D/D	LOS Fails	See Note 1
- Future Conditions with MS and HS Traffic (2020)	C/B* *4 lane Route 50	LOS Fails	B/A* *3 lane Roundabout and 6-lane Route 50
<u>Timeline</u>			
- Design	With MS Opening subject to Co./VDOT approval	Requires County acquisition of R/W	
- Construction	With MS Opening subject to Co./VDOT approval	Construction tied to timeline after R/W available	

Note 1: Detailed analysis not included in roundabout study

In terms of responsibility, the traffic for the proposed schools represents only 12 percent of the total traffic at the intersection of Route 50 and Lenah Road (AM and PM Peak period combined). The traffic analysis finds that the proposed turn lane and signal are needed with the existing, let alone projected traffic. LCPS has approached this intersection in a practical manner, seeking to provide a solution that will address both the projected school traffic and a regional need in the safest, most cost effective and time efficient manner possible. LCPS will work with the County on whatever solution deemed most appropriate by the staff but believes that the analysis clearly demonstrates that the signal and west bound left turn lane will provide the best solution by all measures (operation, time, cost and responsibility).

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- 2) *At the present time, the proposed site is served by the unpaved Lenah Road south to Braddock Road. The traffic study notes that a majority of the over 4,900 daily vehicle trips will access the site to and from the south via Braddock Road. The applicant's traffic study also notes that Greenvest LLC is to provide a portion of the Lenah Loop Road between Braddock Road and the site as a two lane undivided road. The SBPL 2008-0002, Lenah, does show a new road, Lenah Village Drive, running along the planned Lenah Loop Road alignment and serving the schools. If this road segment is not in place, the applicant will need to provide this paved connection or investigate paving existing Lenah Road to the south. The applicant notes that the purchase of the school site includes the construction of the Lenah Loop Road along the frontage of the proposed school site, including the realignment of the existing east/west portion to create a T-intersection with the Connector Road and the provision of two lanes of the Lenah Loop Road along the east site frontage. The applicant notes that the additional two lanes (for a full four lane undivided section between the northeast corner of the site and Tall Cedars Parkway) should be provided by the properties on the east side. OTS notes that the anticipated development density on the east would not justify construction of the other two lanes and is concerned that they would not be provided. The Loudoun County transportation model indicates that, with the full CTP in place plus changes including having the Lenah Loop Road terminate at the future Route 659 Relocated in Loudoun County, the segment of the Lenah loop Road adjacent to the eastern boundary of the site south of existing Lenah Road would carry approximately 8,200 daily vehicle trips. More discussion is needed.*

As shown in the traffic study, a majority of the site traffic to and from the schools will be accessing the property to and from the east. Specifically 55% will be accessing the property along Braddock Road. Given the layout of the site access driveways, traffic approaching or departing to and from Braddock Road will likely travel a short distance on the Lenah Loop Road only the southernmost section from Braddock Road to the internal project road. Traffic accessing the site from the north via Route 50 will utilize existing Lenah Road to access the schools. Therefore, there will be very little school traffic, if any, on the section of the Lenah Loop Road from existing Lenah Road to the school access road. The school is participating in building a half section of this road, yet while it will use far less than half of the road capacity. Note: At such time as the Lenah Loop Road is constructed to existing Lenah Road, LCPS has agreed, at the request of Lenah Run residents, to route bus traffic coming from Route 50 to the southern entrance.

- 3) *In order to facilitate the construction of the planned Lenah Loop Road along the eastern boundary of the site, the applicant needs to dedicate 35 feet of right of way along the full eastern property edge plus provide all necessary construction related easements including drainage, utility and grading easements. Additional right of way also needs to be dedicated to accommodate separate right and left turn lanes at the planned Lenah Loop Road/Tall Cedars Parkway intersection. The applicant has agreed to provide all necessary right-of-way and construction related easements. The applicant notes that the CPAP for the Lenah Connector Road already*

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includes the 70 foot right of way for this planned four lane undivided roadway. Issue adequately addressed.

Issue addressed.

- 4) *In the event the applicants for the Lenah subdivision 2008-0002 do not construct the Lenah Loop Road, the applicant needs to provide construction of two paved lanes of the Lenah Loop Road along the frontage of their site, which would include the realignment of the existing east-west portion of Lenah Road into the Lenah Loop Road. This also includes turn lanes at the proposed site entrance at future Tall Cedars Parkway. If the two lane on-site and off-site construction of the Lenah Connector is constructed by others south to Braddock Road, then the applicant should provide the other two lanes along their site frontage and two lanes north to Route 50. **The applicant responded similar to Comment #2 above. Further discussion is needed.***

Please refer to the response to comment 2.

- 5) *If not provided under SBPL 2008-0002, the applicant needs to provide two paved lanes along the full frontage of existing Lenah Road plus all VDOT required turn lanes at the proposed site entrances. The applicant notes that the site plan for the proposed school will include frontage improvements along existing Lenah Road plus any required turn lanes at the proposed site entrances. Issue adequately addressed. The applicant wants to discuss the extent and phasing of the frontage improvements on Lenah Road given the location of an existing pond. Further discussion needed.*

At the August 5, 2008 transportation meeting, the construction and phasing of frontage improvements were discussed. LCPS has offered to construct a full section of existing Lenah Road from where it presently ends at Lenah Run Circle to (just beyond) the westernmost entrance to the school site. The intent of this improvement is to provide the full section, as needed to the entrance rather the typically required half section across the full frontage. It was generally acknowledged that the proposed full section was a practical approach and that it would address the needs of the anticipated traffic circulation. VDOT suggested examining the possibility of grading out the frontage between the western entrance and the western property boundary and providing a better drainage ditch. LCPS could grade out the road and provide a ditch. This will require clearing existing trees and moving the bank back approximately five feet. This, of course, would be required if full frontage improvements were implemented. VDOT also asked that LCPS examine the existing Lenah Road section east of the site, specifically the curve section to the east of Lenah Run Drive to determine if it complies with VDOT standards. This section has been reviewed and it is constructed to provide safe and adequate access for the posted 25 mph speed limit. No improvements are needed.

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The pavement is 20 feet in width with two-foot shoulders and there is adequate sight line and stopping distance.

- 6) *The applicant needs to provide pedestrian/bike trail facilities parallel to existing Lenah Road and the Lenah Loop Road along the site frontage. The applicant notes that an 8 foot wide trail will be provided along existing Lenah Road. OTS recommends that a 10 foot wide trail within a 14 foot wide public easement be provided to meet AASHTO standards. Second, the applicant notes that the Lenah Loop Road is being constructed by the owner of the property. OTS has checked the initial construction plans for the Lenah Loop Road segment adjacent to the proposed school site under CPAP 2008-0060 and notes that 5 foot wide sidewalks are proposed on each side. OTS will recommend under this CPAP application that 10' wide trails within 14' wide easements be provided.*

These comments will be addressed as part of the review and approval of CPAP 2008-0060 and the middle school site plan.

- 7) *The number of parking spaces shown on the concept plan seems high. What are the Ordinance parking requirements for the two schools combined? Please clarify. OTS defers to the Department of Building & Development of Building & Development on this possible issue. The applicant notes that the parking areas depicted on the SPEX plat are consistent with other middle and high school locations which their experience has shown is needed. The applicant also notes that the current zoning ordinance parking standards are inadequate and that the additional spaces are needed for events including back to school nights, school plays, sporting events, etc. The applicant notes that a shortage of parking has resulted in surrounding neighborhoods being affected. Based on the applicant's response, OTS has no issue with the proposed number of parking spaces. However, please note that the Loudoun County Department of Building & Development has the final word on this issue.*

Issue Addressed to OTS satisfaction, final determination and discussion with Building and Development as part of Site plan Approval.

- 8) *The applicant's initial traffic study includes assumptions, which need further discussion and understanding before they can be used by OTS for making decisions regarding transportation infrastructure for the school. First, the distribution of 55% of the proposed school traffic to/from the south and east on Braddock Road presents a problem in that portions of Braddock Road to the east are not paved. OTS believes that the majority of site traffic would access via Route 50. However, if the applicant believes the distribution included to be accurate, then what steps will be taken to improve Braddock Road to the east of the Lenah Connector Road? In addition, the amount of background traffic assumed on Route 50 between the existing 2007 traffic (approximately 12,600 daily east of Lenah Road) counts and the year 2010 (26,700) appear excessive given*

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the relatively short time frame and the current economic market. As such, the recommendations from the study regarding the round about need additional review in light of more realistic background traffic assumptions. Further discussion is needed.

The traffic study utilized the Loudoun County Public Schools planning zone s data to determine the traffic patterns associated with the catchment area. Specifically with regard to the 55% to and from the south via Braddock Road, the planning zone data showed an overwhelming proportion of students living in the areas served directly by Braddock Road. Therefore, the data and the routing is representative of the anticipated student population and their most direct route to the school. In terms of Braddock Road, the attached exhibit (LCPS Lenah Road Property Braddock Road Exhibit dated August 15, 2008) shows the unpaved sections of Braddock along with the developments responsible for construction and the projected improvement schedule. The construction of Braddock Road is associated with a number of by-right and proffered projects. It is expected that with the exception of the Westport project frontage there will be a paved two lane Braddock Road from the east to the Lenah Loop Road (Lenah Village Drive) prior to the middle school opening in the Fall of 2010. It is not anticipated that the unpaved portion will deter travel on this road. There are many roads in Loudoun County that are unpaved and utilized by both school and non-school traffic, including buses. Braddock Road is presently utilized by commuting motorists as a Route 50 alternate.

There was some discussion about the appropriate volume of traffic on Route 50. The TIA for the school utilized historic data to forecast future traffic on Route 50 and followed the parameters established by the county and VDOT during the traffic scoping conference. If the volume of traffic is not anticipated to reach 26,700 VPD in 2010, the results and analysis of the study should be considered conservative in that they have overestimated traffic demand. (A scoping meeting was held with VDOT and County officials on December 19, 2007 to outline the parameters of the traffic study. The background traffic assumptions considered in the traffic study were outlined in the scoping document and approved by the VDOT and County officials). As part of a detailed roundabout study prepared for the intersection of Lenah Road and Route 50, the traffic volumes we assumed to remain flat from existing conditions. In order to fully consider both the roundabout and traffic signal/turn lane improvement scenarios, we have provided the following table that summarizes the operational levels of each improvement given different background traffic assumptions. The roundabout information is based from a roundabout study prepared by Alternate Signal Design P.A. while the traffic analysis is based on the TIA prepared from LCPS.

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Note: The improvements proposed by this special exception for the Lenah and Route 50 intersection are a traffic signal and westbound left turn lane.

Route 50 and Lenah Road	Traffic Signal and Additional WB Left Turn	1 Lane Roundabout	2 Lane Roundabout
<u>Operational Analysis</u>	LOS (AM/PM)	LOS (AM/PM)	LOS (AM/PM)
- Existing Conditions with MS Traffic	B/A	B/B	N/A
- Existing Conditions with MS and HS Traffic	C/A	LOS Fails	A/A
- Future Conditions with MS Traffic (2010)	D/D	LOS Fails	A/A
- Future Conditions with MS and HS Traffic (2011)	D/D	LOS Fails	See Note 1
- Future Conditions with MS and HS Traffic (2020)	C/B* *4 lane Route 50	LOS Fails	B/A* *3 lane Roundabout and 6-lane Route 50

Note 1: Detailed analysis not included in roundabout study

- 9) *The most appropriate improvement (round about, traffic signal with turn lanes, etc.) at the Route 50/Lenah Road intersection needs to be determined in light of this application. Engineering and cost alternatives need to be developed and reviewed. VDOT must ultimately approve these transportation improvements. Further discussion and work is needed to move forward. This will entail additional analysis.*

See responses to comments 1 and 8, along with attached cost estimates.

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Lenah Run - Loudoun County Public Schools

Cost Estimate for Westbound Left Turn Lane and Signal- Route 50 and Lenah Road Intersection -

Location	Cost Component	Quantity	Units	Unit Cost	Component Cost
Intersection Improvements					
John Mosby Highway (Rte. 50) at Lenah Road	Add Westbound Left Turn and transitions	1,200	LF	\$300 /LF	\$360,000
Signals					
John Mosby Highway (Rte. 50) at Lenah Road	New Signal Installation	1	EA	250,000	\$250,000
Roadway Striping					
Intersection Improvements & Construction	Striping/Signage	1	EA	12,000	\$12,000
Maintenance of Traffic During Construction					
Intersection Improvements and Construction	MOT	1	EA	60,000	\$60,000
Total					\$682,000
Contingency (20% of total cost)					\$136,400
Construction Cost Total					\$818,400

Notes:

1. Preliminary analysis indicates that the signal and improvements can be accommodated without right-of-way acquisition.
2. A 6' extension of the existing bridge over Lenah Run may be required upon review of design by VDOT. If required it is estimated to cost \$200k in addition to the figures listed above.

Lenah Run - Loudoun County Public Schools

Cost Estimation Worksheet for single lane roundabout - Route 50 and Lenah Road Intersection

Location	Cost Component	Quantity	Units	Unit Cost	Component Cost
Intersection Improvements					
John Mosby Highway (Rte. 50) at Lenah Road	Roundabout	850	LF	\$300 /LF	\$255,000
	All Approach Lanes	1,260	LF	\$300 /LF	\$378,000
Roadway Striping					
Intersection Improvements & Construction	Striping and signage	1	EA	15,000	\$15,000
Maintenance of Traffic During Construction					
Intersection Improvements and Construction	MOT	1	EA	250,000	\$250,000
Total					\$898,000
Contingency (20% of total cost)					\$179,600
Total Construction Cost					\$1,077,600

Land Acquisition	Description	Acreage	\$/Acre	Cost
TM 100 Parcel 3 (Kaya- commercial use)	NW Corner of intersection	0.02 AC	283,150	\$6,000
TM 100 Parcel 7A (Skillman- commercial use)	SW Corner of intersection	0.08 AC	391,973	\$31,000
TM 100 Parcel 21A (Mamula- residential use)	SE Corner of intersection	0.10 AC	281,468	\$28,000
TM 100 Parcel 20A (Peer - residential use)	East of Mamula property	0.08 AC	225,000	\$18,000
TM 100 Parcel 20 (Peer - residential use)	East of TM100 P20A Peer property	0.03 AC	106,711	\$3,000
TM 100 Parcel 7A (Rouse- residential use)	West of Skillman	0.07 AC	391,951	\$27,000
TM 100 Parcel 7D (Rouse - commercial use)	West of TM100 P 7A Rouse property	0.02 AC	392,000	\$8,000
Total Land Acquisition				\$121,000

Note: Land values based on current Loudoun County Tax Assessment. Cost estimates exclude legal fees associated with acquisition.

Total	\$1,198,600
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Lenah Run - Loudoun County Public Schools

Cost Estimation Worksheet for dual lane roundabout - Route 50 and Lenah Road Intersection

Location	Cost Component	Quantity	Units	Unit Cost	Component Cost
Intersection Improvements					
John Mosby Highway (Rte. 50) at Lenah Road	Roundabout	2,500	LF	\$300 /LF	\$750,000
	All Approach Lanes	6,720	LF	\$300 /LF	\$2,016,000
Roadway Striping					
Intersection Improvements & Construction	Striping and signage	1	EA	30,000	\$30,000
Maintenance of Traffic During Construction					
Intersection Improvements and Construction	MOT	1	EA	350,000	\$350,000
Bridge					
Lenah Run	Extend bridge approx. 32'	1	LS	500,000	\$500,000
Total					\$3,646,000
Contingency (20% of total cost)					\$729,200
Total Construction Cost					\$4,375,200

Land Acquisition	Description	Acreage	\$/Acre	Cost
TM 100 Parcel 3 (Kaya- commercial use)	NW Corner of intersection	0.21 AC	283,150	\$59,000
TM 100 Parcel 7A (Skillman- commercial use)	SW Corner of intersection	0.11 AC	391,973	\$43,000
TM 100 Parcel 21A (Mamula- residential use)	SE Corner of intersection	entire property		\$536,400
TM 100 Parcel 20A (Peer - residential use)	East of Mamula property	0.06 AC	225,000	\$14,000
TM 100 Parcel 20 (Peer - residential use)	East of TM100 P20A Peer property	0.05 AC	106,711	\$5,000
TM 100 Parcel 7A (Rouse- residential use)	West of Skillman	0.07 AC	391,951	\$27,000
TM 100 Parcel 7D (Rouse - commercial use)	West of TM100 P 7A Rouse property	0.02 AC	392,000	\$8,000
TM 100 Parcel 8 (Lynch - vacant)	NE Corner of intersection	0.07 AC	7,500	\$1,000
TM 100 Parcel 7D (Rouse - commercial use)	East of TM100 P 9 Lynch property	0.06 AC	235,714	\$14,000
Total Land Acquisition				\$707,400

Note: Land values based on current Loudoun County Tax Assessment. Cost estimates exclude legal fees associated with acquisition.

Total	\$5,082,600
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August 27, 2008

Mr. Marchant Schneider
Planning Project Manager
County of Loudoun
1 Harrison Street SE
Leesburg, VA 20177

RE: **Lenah Schools**
SPEX-2008-0017 and CMPT-2008-0007
BCG Project Number 3486-02-006

Dear Mr. Schneider:

We have received the E.R.T. comments dated August 15, 2008 and the Loudoun Water comments dated August 19, 2008 and offer the following in response.

ENVIRONMENTAL REVIEW TEAM COMMENTS DATED AUGUST 15, 2008

1. *"The stormwater design relies almost exclusively on inlets, pipes and dry ponds with impermeable subsurfaces, leaving little opportunity for maintaining site infiltration as requested by County staff and Loudoun Water staff. Maintaining infiltration is important to maintain groundwater levels used to supply water to the Lenah subdivision. An application's impact on groundwater supply is also an issue for consideration, per Zoning Ordinance Section 6-1310(M). Accordingly, staff has the following suggestions for stormwater design to resolve this outstanding issue:*
 - *Reconsider using permeable parking surfaces for the bus parking area near the northern project boundary and the general parking area between the middle school and baseball diamond. Such surfaces are considered permeable and do not require further Best Management Practice treatment. Detention designs under the parking surface can store and convey excess runoff if soils lack permeability needed for complete infiltration.*
 - *The site plan shows significant vegetation and berm design between the north parking lot and Lenah Road. Staff recommends incorporation of bioretention basins (with underdrains if soils are not sufficiently permeable) for the parking lot and roof runoff conveyed through pipes in this area. Vegetation that is required for BMP purposes within the basins can be irrigated by runoff instead of potable water and also meet Type 2 buffer requirements. Other grass and treed areas in the buffer can be irrigated from a cistern(s) draining rooftop runoff. Office of Capital Construction includes a cistern design for the Brambleton Public Safety Center for rainwater reuse."*

Staff believes that implementing these recommendations will remove some or all of Pond 1. Staff also recommends a follow-up meeting with Building and Development staff, Planning, Loudoun Water, and LCPS to resolve stormwater issues.

Response: LCPS has concerns regarding the long term performance of permeable parking in these high traffic areas. The increased construction costs of this type of pavement are not compatible with current budget guidelines. LCPS concurs with the staff recommendation to provide bioretention basins and believes the appropriate solution to be infiltration based technology including bioretention basins/filters for areas outside of the pavement structure.

To this end, LCPS is agreeable to providing bioretention basins/filters between the north parking lot and Lenah Road, to the extent that it does not significantly impact berming along Lenah Road. LCPS has worked in good faith with residents of the Lenah Run Community to provide a substantial landscape buffer that will provide an attractive appearance along Lenah Road. Underdrains will be provided as necessary. LCPS further proposes BMP at the northwest corner of the site to mitigate the potential runoff from athletic fields. This BMP will consist of either the retrofit of the existing pond to a 65% efficient BMP facility contingent upon Corps of Engineers/DEQ approval, or the provision of sediment forebays and a bioretention facility adjacent to the pond.

As to irrigation of the buffer, current plans are to utilize native species for plantings. And little if any irrigation is anticipated. LCPS does not irrigate landscaping.

We agree that Pond #1 will be reduced in size although we believe it will still be required for detention purposes.

(See Attached Exhibit)

2. *"The bus storage parking storage area is a stormwater hotspot, as described in Facilities Standards Manual (FSM) section 5.320.E.1.d. Staff recommends a condition of approval to require oil-water separators to treat runoff emanating from that parking lot."*

Response: LCPS agrees to provide an oil water separator for the bus parking lot, the location of which will be determined at final design. It is noted that the buses to be parked in this area will be in good operating condition and will be maintained at central maintenance facilities, not on site.

3. *"Staff recommends a condition of approval for the existing pond site on the northwestern side of the project area, that if this pond is rebuilt for BMP purposes, then the pond design will achieve at least 65-percent phosphorous removal efficiency. This design goal will help meet the pre-development pollution load standard in FSM Section 5.320."*

Response: LCPS agrees to this condition, adding the following language:
"Subject to Corps of Engineers and VA DEQ approval, that if this pond...."

4. *"As agreed to by LCPS and consistent with Revised General Plan (RGP) Policy 23 on page 5-11, staff recommends a condition of approval for stream and wetland mitigation as follows: 1) within the Broad Run Watershed within the same Loudoun County geographic Policy Area, 2) within the Broad Run Watershed within another Loudoun County geographic Policy Area, or 3) elsewhere within Loudoun County, subject to approval by the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality."*

Response: LCPS agrees to this condition.

REGARDING TREE CONSERVATION

5. *"To meet ROP policies addressing tree conservation, including Forest, Tree and Vegetation policy 5 in Chapter staff recommends a condition of approval for tree conservation and maintenance of the preserved area."*

Response: LCPS agrees to this condition.

REGARDING WATER USE

6. *"An irrigation well is being considered for athletic fields and outdoor uses, possibly in the same source water region as the Lenah subdivision wells. ZO Section 6-1310 (M) is relevant to this design choice. Staff recommends a condition of approval requiring the completion of a hydrogeological report, prior to site plan approval of either school, for the anticipated water demand for the middle school and high school uses to assess the effect of water supply on the Lenah wells, consistent with standards in Chapter 6 of the FSM. Staff further recommends that this condition allow for access to the wells for Building and Development staff to conduct water quality and quantity testing."*

Response: The proposed irrigation well is intended to serve the high school competition fields. The middle school fields are not proposed for irrigation. LCPS has hired a hydrogeologist to conduct a hydrogeologic assessment, including the implementation of a groundwater monitoring program, in accordance with Section 6.240 of the Facilities Standards Manual. Because the well is not proposed for use at the middle school it would be appropriate to require the completion of the report prior to the issuance of the occupancy permit for the high school. As offered in the June 3, 2008 referral response, LCPS will work with the County staff to determine if the proposed well will be suitable for the County's monitoring program.

LOUDOUN WATER COMMENTS DATED AUGUST 15, 2008

1. *"Loudoun Water requests that stormwater be managed in a manner that appropriately treats the water and allows it to percolate into the ground, thereby recharging the groundwater."*

Response: Best management practices for storm water runoff will be in accordance with the Virginia Stormwater Management Handbook (VSMH) to mitigate potential

pollutant impacts from the development. As noted in our response to Loudoun County ERT, LCPS proposes the use of bioretention facilities between the north side of the middle school and Lenah Road to promote infiltration of stormwater runoff. LCPS further proposes BMP at the northwest corner of the site to mitigate the potential runoff from athletic fields. This BMP will consist of either the retrofit of the existing pond to a 65% efficient BMP facility contingent upon Corps of Engineers/DEQ approval, or the provision of sediment forebays and a bioretention facility adjacent to the pond. This design will far exceed the VSMH requirements as very little pervious area drains to this outfall. Underdrains in the football field will be routed to drain to these facilities.

2. *"Loudoun Water requests the school follow best management practices to mitigate potential pollutant impacts from activities within the property such as athletic field management and bus parking."*

Response: LCPS has implemented a turf management best practices program for fertilization, pesticide and herbicide applications and will continue to implement this program at new facilities. To mitigate any potential pollutant impact from the bus parking, LCPS agrees to provide an oil-water separator as noted in its response to ERT comments. This oil-water separator will be in addition to other BMP that would otherwise be required.

3. *"Loudoun Water requests placement and/or pumping rates that do not impact the Lenah Run wells and adherence to best management irrigation practices that minimize watering."*

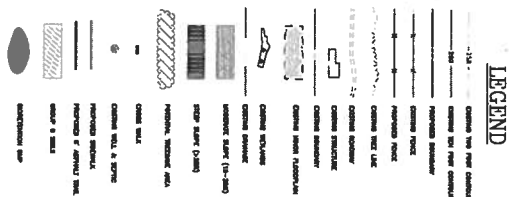
Response: LCPS has contracted with a hydrogeologist to prepare a hydrogeological assessment in accord with Section 6.240 of the County's Facilities Standards Manual. This assessment will include the development of a groundwater monitoring program to insure that there will be no adverse impact to the Lenah Run wells or to the individual surrounding single family wells. The hydrogeological report will be submitted to the County and Loudoun Water for review. LCPS will work closely with Building and Development, the Health Department and Loudoun Water on the hydrogeological assessment.

Should you have any further questions please contact me at the office.

Sincerely,
BOWMAN CONSULTING GROUP



Michael P. Pointer, ASLA
Principal



DATA	NAME	COLOR	SIZE	TYPE	PRICE	STATUS
00A	ROMANIANE SET LUMI	C	3	M	87	OK
00B	HUNGARE SET LUMI	B	3	M	87	OK
00C	ITALI-SPAGNA COMPLEX	B/C	3	M	87	OK
00D	FRANCE SET LUMI	C	3	M	87	OK
00E	POLE SET LUMI	B	3	M	87	OK
00F	RUSSIA SET LUMI	C	3	M	87	OK
00G	ASIEAN SET LUMI	C	3	M	87	OK
00H	SCANDINAVIAN COMPLEX	B	3	M	87	OK
00I	AFRICA SET LUMI	B	3	M	87	OK
00J	RECIPIENT COMPLEX SET LUMI	B	3	M	87	OK
00K	ITALY SET LUMI	B	3	M	87	OK
00L	ALBANIA SET LUMI	C	3	M	87	OK
00M	YUGOSLAVIA SET LUMI	C	3	M	87	OK

THE SUBJECT DEVELOPMENT DOES CONDOM CLASS II AND ONE CLASS IV SOLS, FOR THE LATEST COUNTY SOLS MAP AND AS INDICATED BY THE DEVELOPMENT GUIDE TO THE USE OF SOLS MAP, LANDOWN COUNTY WISCONSIN.

LEGEND

PLAN STATUS		
DATE	DESCRIPTION	
SHAIP	TO	WING
DESIGN	DRAWN	CHWD
SCALE	1" = 200'	
JOB NO.	3486-02-001	
DATE	AUG. 28, 2008	
FILE NO.	3486-0-021-00	
SHEET 1 OF 1		

SCHEMATIC BIORETENTION EXHIBIT

**LOUDOUN CO. PUBLIC SCHOOLS
LENAH ROAD PROPERTY**

DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

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Lynchburg, Virginia 21775
Phone: (703) 443-2400
Fax: (703) 443-3425
www.bowmanconsulting.com

Bowman
CONSULTING

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August 27, 2008

Mr. Marchant Schneider
Planning Project Manager
County of Loudoun
1 Harrison Street SE
Leesburg, VA 20177

RE: **Lenah Schools**
SPEX-2008-0017 and CMPT-2008-0007
BCG Project Number 3486-02-006

Dear Mr. Schneider:

With regards to comments on Green Building Practices from E.R.T dated August 15, 2008 we offer the following in response.

REGARDING GREEN BUILDING PRACTICES

1. *"Staff commends LCPS for the thorough consideration of LEED for this project and looks forward to the reviewing the overall report. The following suggestions apply to certain LEED credits but are not outstanding issues for this special exception:*
 - *Achieving the site sustainability credits for stormwater quantity and quality is unlikely, given the current layout. The quantity credit would require one of two outcomes: to attenuate the critical storm volume as well as peak flow event, or to fortify channels downstream of the development to withstand the change in stormwater quantity. The detention volume required for the first option is too extensive for the pond layout shown, and the dense vegetation on the downstream, natural channels would preclude further improvement of the channel. Regarding storm quality, the LEED standard requires effective treatment of the first inch of impervious runoff. The untreated bypass flow on the eastern parking lot would disqualify the project for the quality credit. Both credits also presume a concerted effort by the builder to maintain site infiltration potential. The previous stormwater comment could help achieve the stormwater quality credit.*
 - *The measurement and verification credit under energy and atmosphere may be achieved with current school operating procedures, as described in the applicant's response letter. That notwithstanding, staff still suggests consideration of energy dashboards in school design.*
 - *The 40-percent target for water efficiency in building use is outstanding. Staff does suggest pursuit of minimal irrigation needs for buffer plantings. The pervious stormwater comments could further improve outdoor water use efficiency.*

- Response:**
- As noted above infiltration based BMP's are being incorporated into the site to the extent practicable.
 - LCPS has an educational program (energy report card) in place for reporting and teaching.
 - LCPS does not irrigate landscaping. Landscaping will be predominately native plant materials that are drought tolerant.

2. *"Staff has discussed geothermal energy measures with school staff. While there is general interest in this approach, logistics are an historic hurdle. The time required to install geothermal wells usually conflicts with the shortened schedules for constructing the corresponding schools. Staff suggests consideration of a geothermal layout for the high school, where the well construction would coincide with the middle school construction schedule. That way, when the high school plan is approved and ready for construction, the geothermal design would already be in place. Staff will follow up with LCPS about this option outside of this special exception review."*

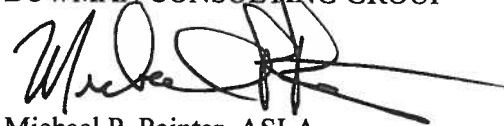
Response: Staff has referred to only one of the issues/constraints associated with geothermal systems. LCPS has performed detailed evaluation of geothermal systems as well as many other systems and has determined that the current system design is the most advantageous system for the facility in terms of operations, maintenance, energy efficiency and life cycle considerations

3. *"Staff suggests that at least one of these school projects formally pursue LEED certification, to verify that these credits are attained. Staff is working on options that would minimize certification expense and will discuss with LCPS outside of this special exception review."*

Response: LCPS has identified some of the design characteristic related to sustainable and green practices that are relative to the LEED scorecard; however LCPS is not pursuing LEED certification. The benefits of sustainable design, construction and operations are being realized through energy use, energy conservation, and energy education within the system. The project team of Architects, engineers, consultants, commissioning agents and LCPS staff are committed to verification that the design parameters identified in the contract documents will be implemented in the construction, operation and maintenance of the facility.

Should you have any further questions please contact me at the office.

Sincerely,
BOWMAN CONSULTING GROUP



Michael P. Pointer, ASLA
Principal